

ARTIS

Autonomous Rail-Guided Tank Inspection System



Double bottom ballast water tank (construction phase)



Robotic Inspection Demonstrator Concept



ARTIS Demonstrator with 3D rail guidance capability

Evaluation and Demonstration of Robotic Solutions for the Inspection and Maintenance of Ballast Water Tanks on Ships

The robotic system ARTIS was developed as a demonstrator in the context of the international research project “RObots in Tanks”, which contributes to the development and integration of new maintenance and inspection processes in narrow, difficult-to-access, dirty, and complex closed spaces, such as ballast water tanks (BWTs) in ships.

Design parameters:

Control:	Fully autonomous
Locomotion:	3D rail guided
Length:	693 mm
Width:	244 mm
Height:	293 mm
Approx. Weight:	9 kg
Max. Speed:	0.52 m/s
Est. Power Consumption:	45W
Power Supply:	25.6 V 5000 mAh LiPo Battery
Est. operation period:	2.9 h
Drivetrain	
Motor type:	Brushed DC
Motor torque:	110 mNm
Gear:	Planetary 36:1
Torque @ rail:	198 Nm
Designated sensors	
High-Res Cam:	Prosilica GC2450C 2448 x 2050 px 15 Hz
IMU:	Xsens Mti
Oxygen Monitor	
Thickness measurement:	ATP TE 1250-FN

Partners:



Supported by:



on the basis of a decision
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